REMARKS

Corrections to the Specification

The Specification has been amended to correct a typographical/proofreading error in Table 1. On page 26, line 4, "acceptor" has been deleted and "donor" has been inserted therefore. This is a correction of an obvious error; at page 25, lines 18-20, the Specification reads, "Table 1 below lists the splice donor and acceptor sequences that conform to consensus splice sequences including the AG-GT motif....", but the headings of Table 1 only refer to "5'splice acceptor" and "3' splice acceptor" sequences. The upper half of Table 1 lists the 11 exons of the human MN gene, and the heading refers to "5' splice" sequences. As a 5' splice site would be a donor site, the heading in line 4 of Table 1 should obviously read "5' splice donor".

Corrections to SEQUENCE LISTING

The sequence for SEQ ID NO: 76 was given incorrectly in the SEQUENCE LISTING as atacagggga t. This incorrect sequence is an obvious typographical error; as seen in Table 1 on page 26 of the description, the correct sequence for SEQ ID NO: 76 (the 5' splice donor for Exon 10) is cacaggtatt a. The sequence atacagggga t is actually the correct sequence for SEQ

ID NO: 77 (the 3' splice acceptor for Intron 1), as shown in Table 1 and SEQ ID NO: 77 in the SEQUENCE LISTING. The Applicants are herewith providing a substitute paper copy of the SEQUENCE LISTING and substitute computer readable copy (CRF), and request that the SEQ ID NO: 76 in the SEQUENCE LISTING be amended to read cacaggtatt a to be consistent with the specification. The SEQUENCE LISTING information recorded in computer readable form is identical to the written paper copy.

Amendments to the Claims

Claims 20-27 and 43-44 have been cancelled. Applicants reserve the right to file claims 20-27 and claims 43-44 in divisional applications.

Claim 31 has been amended to point out with more particularity and clarity the subject matter regarded by the Applicants as their invention. In the description of MN protein in Claim 31, the phrase "**of 0.02 M to 0.15 M NaCl at temperatures of 50°C to 70°C**" has been added to exemplify "stringent hybridization conditions" for purposes of increased clarity and particularity.

Support for the amendment to Claim 31 can be found in the instant application at page 23, lines 20-24, which reads: "Stringent hybridization conditions are considered herein to conform to standard hybridization conditions understood in the

art to be stringent. For example, it is generally understood that stringent conditions encompass relatively low salt and/or high temperature conditions, such as provided by 0.02 M to 0.15 M NaCl at temperatures of 50°C to 70°C."

Further, the Specification elucidates the meaning of "stringent hybridization conditions" at page 23, lines 20-26, wherein stringent conditions are defined, and at page 23, line 28 to page 24, line 2, wherein such stringent conditions are exemplified from standard references in the art. Applicants respectfully submit that ones of skill in the art know what hybridization conditions are considered in the art to be "stringent".

Applicants respectfully maintain that ones of skill in the art, to which the Specification is directed, understand the metes and bounds of the term "stringent hybridization conditions" as found in textbooks and standard laboratory manuals in the art, as exemplified by those cited in the Specification. However, Applicants have amended Claim 31 to include exemplary stringent hybridization conditions to point out with more particularity and clarity the subject matter regarded by the Applicants as their invention.

Applicants respectfully conclude that the above amendments do not introduce any new matter. Claims 31-42 are

now pending and under examination. Applicants respectfully request entry of the above amendments.

I. 35 U.S.C. Section 112, Second Paragraph Rejection

Claims 31-42 stand rejected under 35 U.S.C. Section 112, second paragraph, as being "indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention." [Office Action, page 2, section 6.] Applicants respectfully traverse and request that the Examiner reconsider and withdraw the rejection in view of the above and the following remarks, and the amendment to Claim 31.

The Office Action at page 2, Section 7, states:

> Claim 31 recites the limitation of "stringent hybridization", of which the specification discloses as a "relatively low salt and/or high temperature condition" (see page 23). One of skill in the art cannot adequately determine from the specification what type of hybridization is encompassed by this definition, as such the metes and bounds of the term cannot be determined.

Applicant respectfully points out that Claim 31 has been amended to recite, in part:

> . . . wherein said MN protein is encoded by a nucleic acid wherein the nucleotide sequence for said nucleic acid is selected from the group consisting of:
>
> (1) SEQ ID NO: 1;

(2) nucleotide sequences that hybridize specifically under stringent hybridization conditions **of 0.02 M to 0.15 M NaCl at temperatures of 50°C to 70°C** to the complement of SEQ ID NO: 1; and

(3) nucleotide sequences that differ from SEQ ID NO: 1 or from the nucleotide sequences of (2) in codon sequence due to the degeneracy of the genetic code.

[Claim 31, as amended.]

The Specification elucidates the meaning of "stringent hybridization conditions" at page 22, line 21 to page 24, line 2, which reads in part beginning at page 23, line 20:

Stringent hybridization conditions are considered herein to conform to standard hybridization conditions understood in the art to be stringent. For example, it is generally understood that **stringent conditions** encompass relatively low salt and/or high temperature conditions, **such as provided by 0.02 M to 0.15 M NaCl at temperatures of 50°C to 70°C**. Less stringent conditions, such as, 0.15 M to 0.9 M salt at temperatures ranging from 20°C to 55°C can be made more stringent by adding increasing amounts of formamide, which serves to destabilize hybrid duplexes as does increased temperature.

Exemplary stringent hybridization conditions are described in Sambrook et al., Molecular Cloning: A Laboratory Manual, pages 1.91 and 9.47-9.51 (Second Edition, Cold Spring Harbor Laboratory Press; Cold Spring Harbor, NY; 1989); Maniatis et al., Molecular Cloning: A Laboratory Manual, pages 387-389 (Cold Spring Harbor Laboratory; Cold Spring Harbor, NY; 1982); Tsuchiya et al., Oral Surgery, Oral Medicine, Oral Pathology, 71(6): 721-725 (June 1991).

[Emphasis added.]

In view of the above remarks and the clarifying amendment to Claim 31, Applicants respectfully submit that the term "stringent hybridization" complies with the requirements of 35 U.S.C. § 112, second paragraph.

II. First 35 U.S.C. Section 112, First Paragraph Rejection

Claims 31-42 stand rejected under 35 U.S.C. Section 112, first paragraph, as

> failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification has only set forth the sequence of SEQ ID NO: 1 and is therefore not commensurate in scope to claims that read on nucleotide sequences that hybridize to the complement of SEQ ID NO: 1.

[Office Action, page 3, Section 8.] Applicants traverse the subject rejection respectfully pointing out that the Federal Circuit quoted from In re Marzocchi, 169 USPQ 367, 369 (CCPA 1971) in In re Brana, 34 USPQ2d 1437 at 1441 (Fed. Cir. 1995) as follows:

> [A] specification disclosure which contains a teaching of the manner and process of making and using the invention in terms which correspond in scope to those used in

> describing and defining the subject matter sought to be patented *must* be taken as in compliance with the enabling requirement of the first paragraph of § 112 *unless* there is reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support.

[Emphasis in the original.]

MPEP § 2164.04 entitled "Burden on the Examiner Under the Enablement Requirement" directs that the initial burden of proof to challenge a presumptively enabling disclosure is upon the Examiner. The patent case law, as well as the MPEP, makes clear that in accordance with case law, statements in a patent specification relied upon for enabling support that correspond in scope to a claimed invention "*must* be taken as in compliance with the enabling requirement of the first paragraph of § 112 *unless* there is reason to doubt the objective truth of" those statements. [In re Marzocchi, supra; italicized emphasis in the original; underlined emphasis added.] Applicants respectfully submit that there is no reason to doubt the objective truth of statements relied upon for enabling support in the Specification for the claimed invention.

Applicants respectfully point out that at the time of filing an application, an applicant need not have any examples. An invention may be constructively reduced to practice by filing an application with no working examples at all or with paper examples. As the Federal Circuit has stated:

> The first paragraph of § 112 requires nothing more than *objective* enablement. *In re Marzocchi*, . . . , 169 USPQ 367, 369

> (CCPA 1971). How such a teaching is set forth either by the use of illustrative examples or by broad terminology, is irrelevant.

[In re Vaeck, 20 USPQ2d 1438 at 1445 (Fed. Cir. 1991); emphasis added.]

As indicated above, the amendment to Claim 31 defines "stringent hybridization conditions" with particularity and clarity. Applicants respectfully but firmly maintain that the "nucleotide sequences that hybridize specifically to the complement of SEQ ID NO: 1 under stringent hybridization conditions" are defined in compliance with the written description requirement of 35 U.S.C. Section 112, first paragraph.

The Examiner states that:

> the skilled artisan cannot envision the detailed structure of the encompassed polynucleotides that hybridize to the complement of SEQ ID NO: 1 because the molecules identified have not been characterized or associated with any structural or functional properties and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation.

[Office Action, pages 3 to 4, section 8.] The Specification states at page 43, lines 6-7 that: "Only very closely related nt sequences having a homology of at least 80-90% would hybridize to each other under stringent conditions." That statement

provides structural characterization of "nucleotide sequence that hybridize specifically under stringent hybridization conditions to the complement of SEQ ID NO: 1. . . ."

Further, Applicants respectfully point out that the Guidelines for the Examination of Patent Applications Under the 35 USC 112, ¶ 1, "Written Description" Requirement [hereinafter cited as "Guidelines"]; Fed. Register, 66(4) (January 5, 2001) at page 1105, column 1] notes under the sub-heading "A. Original Claims":

> There is a strong presumption that an adequate written description of the claimed invention is present when the application is filed. . . . However, the issue of lack of adequate written description may arise even for an original claim when an aspect of the claimed invention has not been described with sufficient particularity such that one skilled in the art would recognize that the applicant had possession of the claimed invention. . . . The claimed invention as a whole may not be adequately described if the claims require an essential or critical feature which is not adequately described in the specification and which is not conventional in the art or known to one of ordinary skill in the art. . . .

[Emphasis added.] The Guidelines [*id.* at page 1106, column 1] indicate that "the description need only describe in detail that which is new or not conventional." [Emphasis added.] Applicants respectfully point out that it is conventional to determine whether a nucleotide sequence hybridizes specifically under

stringent hybridization conditions to a known nucleotide sequence or its complement, as SEQ ID NO: 1 or SEQ ID NO: 1's complement.

At page 4 of the Office Action, the Examiner mistakenly cites the findings of The Regents of the University of California v. Eli Lilly (43 USPQ2d 1398-1412) as "clearly applicable to the instant rejection", as in that case the court stated that "An adequate written description of a DNA. . .'requires a precise definition, such as by structure, formula, chemical name, or physical properties', not a mere wish or plan for obtaining the claimed chemical invention."

Applicants respectfully submit that The Regents of the University of California v. Eli Lilly case does not apply to the question of adequate written description in the instant application. In that case, the plaintiffs did not have the relevant DNA sequence for the claimed human insulin gene cDNA, but only the DNA sequence for the rat insulin gene cDNA; therefore, the court found that: "[A] description of rat insulin cDNA is not a description of the broad classes of vertebrate or mammalian insulin cDNA." In contrast, the Applicants in the instant application do have the relevant DNA sequence for the human MN/CA IX gene cDNA, that is SEQ ID NO: 1, and therefore do have the relevant nucleotide sequence for the complement to the human MN/CA IX gene cDNA.

Therefore, the nucleic acid sequence of SEQ ID NO: 1 should be sufficiently descriptive of both its complement and for nucleic acid sequences which hybridize to it and its complement under "stringent hybridization conditions," to comply with the written description requirement of 35 USC 112, first paragraph. Applicants respectfully point out that a "specification is directed to those skilled in the art and need not teach or point out in detail that which is well-known in the art." [In re Myers, 161 USPQ 668, 671 (CCPA 1969); see also, G.E. Col. v. Brenner, 159 USPQ 335 (CAFC 1968).] As the Federal Circuit stated in Spectra-Physics, Inc. v. Coherent, Inc., 3 USPQ2d 1737, 1743 (Fed. Cir. 1987): "A patent need not teach, and preferably omits, what is well known in the art." [Emphasis added.]

The focus of 35 U.S.C. § 112, first paragraph is on a person skilled in the art, rather than the general public, and enablement is determined with reference to the knowledge possessed by such a hypothetical person. For that reason, a specification is not required to teach, "and preferably omits," what is well known in the relevant art. [Lindemann Maschinenfabrik G.m.b.H. v. American Hoist & Derrick Co., 221 USPQ 481, 489 (Fed. Cir. 1984); Hybritech, Inc. v. Monoclonal Antibodies, Inc., 231 USPQ 81, 94 (Fed. Cir. 1986), cert.

denied, 480 U.S. 947 (1987); In re Wands, 8 USPQ2d 1400, 1402 (Fed. Cir. 1988).]

Ones of skill in the art know how to determine whether a nucleic acid sequence is 80-90% homologous to SEQ ID NO: 1 or to SEQ ID NO: 1's complement. Ones of skill in the art also know how to perform routine tests to determine whether a nucleic acid sequence hybridizes under the exemplified stringent hybridization conditions pointed out in claim 31 to SEQ ID NO: 1 or to SEQ ID NO: 1's complement.

Such experimentation would not be considered "undue". In regard to undue experimentation, the Patent and Trademark Office Board of Patent Appeals and Interferences indicated in Ex parte Foreman, 230 USPQ 546 at 547 (1986) that the "test is not merely quantitative, since a considerable amount of experimentation is permissible, if it is merely routine. . . ."

Applicants respectfully conclude that the instant application reasonably conveys to ones of skill in the art that the Applicants at the time of filing the application had possession of the claimed invention, and that the instant application meets the written description requirement of 35 USC 112, first paragraph. Applicants respectfully request that the Examiner reconsider and withdraw this rejection in view of the above amendment and remarks.

III. Second 35 USC 112, First Paragraph Rejection

The Examiner states at page 5 of the Office Action that Claims 31-42 are rejected under 35 USC 112, ¶ 1, because "the specification, while being enabling for a method of identifying MN75, MN7, MN9, and M12 antibodies that bind to a specific site on the MN protein, does not reasonably provide enablement for a method of identifying any and all organic or inorganic molecules capable of binding to the MN protein." Applicants respectfully traverse the instant rejection pointing out that a routine assay is all that is necessary to determine whether a subject organic or inorganic molecular will "inhibit the adhesion of . . . vertebrate cells to . . . MN protein . . . " [Claim 31.]

As the Federal Circuit stated in In re Certain Limited-Charge Cell Culture Microcarriers, 221 USPQ 1165 at 1174 (U.S. ITC 1983), aff'd sub nom., Massachusetts Institute of Technology v. AB Fortia, et al., 227 USPQ 428 (Fed. Cir. 1985): "Thus, the fact that experimentation may be complex . . . does not necessarily make it undue, if the art typically engages in such experimentation." In regard to undue experimentation, the Patent and Trademark Office Board of Patent Appeals and Interferences indicated in Ex parte Foreman, 230 USPQ 546 at 547 (1986) that the "test is not merely quantitative, since a considerable amount of experimentation is permissible, if it is

merely routine. . . ." Applicants respectfully conclude that as long as experimentation is considered routine, that such experimentation cannot be considered "undue".

Applicants further respectfully point out that the Specification provides considerable guidance (as detailed below) to select an organic or inorganic molecule for the routine testing described in the Specification. Again the Specification is "directed to those of skill in the art and need not teach or point out in detail that which is well-known in the art." [In re Myers, supra; G.E. Col. v. Brenner, supra; Lindemann, supra; Hybritech, Inc. v. Monoclonal Antibodies, supra; and In re Wands, supra.]

Further again, Applicants respectfully rely upon In re Marzocchi, supra and In re Brana, supra, wherein in the latter case at page 1441 the Federal Circuit states:

> [A] specification disclosure which contains a teaching of the manner and process of making and using the invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented *must* be taken as in compliance with the enabling requirement of the first paragraph of § 112 *unless* there is reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support.

[Emphasis in the original.]

Still further again, the Federal Circuit stated:

> The first paragraph of § 112 requires nothing more than *objective* enablement. *In re Marzocchi*, . . . , 169 USPQ 367, 369 (CCPA 1971). How such a teaching is set forth either by the use of illustrative examples or by broad terminology, is irrelevant.

[In re Vaeck, 20 USPQ2d 1438 at 1445 (Fed. Cir. 1991); emphasis added.] Applicants respectfully argue that there is no reason to doubt the objective truth of the statements in the Specification relied upon for enabling support for the claimed invention, and that any reasons proposed by the Examiner in the Office Action are shown below to be in error and/or insufficient to carry the burden of overcoming the presumptively enabling Specification.

As the Federal Circuit firmly indicates above [In re Vaeck, supra], a specification need not have working examples to be enabling, and that solely "broad terminology" is sufficient. As detailed below, the Examiner mistakenly believed that there were no working examples in the Specification, but there are such working examples in the Specification.

The Examiner further mistakenly states at page 5:

> The art teaches that not all antibodies directed against the MN protein are capable of inhibiting the adhesion of MN protein to cells. One such example is Zavada *et al* (cited previously) wherein it is disclosed

> that an antibody directed against the MN protein was unable to inhibit the binding of NIH3T3 cells to the MN protein, and was only effective upon pre-incubation with SAC.

However, the instant Specification teaches at page 69, lines 8-13:

> There can be no doubt on the specificity of cell attachment to purified MN/CA IX+. It is abrogated by specific MAb M75, at a dilution 1:1000 of ascites fluid. This is a correction to our previous report in Zavada et al., Int. J. Oncol., 10: 857 (1997) in which we observed that MN/CA IX produced by vaccinia virus vector and fusion protein GST-MN support cell adhesion, but we did not realize that GST anchor itself contains another binding site, which is not blocked by M75.

[Emphasis added.] Therefore, the reference to which the Examiner cited was in error. There are no known examples of antibodies specific to the MN protein that are incapable of inhibiting the adhesion of MN protein to cells.

The Examiner mistakenly at pages 6-7 of the Office Action refers to "the absence of working examples" and mistakenly states at page 6:

> The specification has demonstrated the use of several antibodies directed against the MN protein but has failed to disclose the identification or [sic] any other organic molecule or inorganic molecule that is capable of binding to the MN protein.

The Applicants respectfully correct those misapprehensions by the Examiner by pointing out three working examples described in

the Specification concerning identified organic molecules, that "inhibit the adhesion of said vertebrate cells to said MN protein. . . ." [Claim 31.]

First, as stated above, the M75 Mab itself is a working example of an organic molecule that binds to the MN protein at the site to which vertebrate cells adhere, and that inhibits cell binding to the MN protein. At page 66, lines 1-4 (Example 2) the Specification describes how

> [t]reatment of the dots of immobilized MN/CA IX with MAb M75 abrogated its capacity to attach the cells, but the control MAb M16, irrelevant for MN/CA IX had no effect. Blocking of cell attachment by M75 shows that the epitope is identical to or overlapping with the binding site of MN/CA IX for cell receptors.

Besides the M75 antibody, the two synthetic polypeptides recited in claim 35, comprising amino acid sequences SEQ ID NOS: 137 and 138, have been shown to bind to the MN protein at the site to which vertebrate cells adhere, and to block the binding of cells to the MN protein, as described in Example 2 according to the methods of the present invention. [See page 62, lines 23-32; page 68, lines 1-20, and page 69, line 8 to page 70, line 3, particularly page 70, lines 1-2, which refers to "blocking of both M75 epitope and of cell binding site by nonapeptides 7 + 2aa."] Those two nonapeptides are not antibodies, but are synthetic nonapeptides which have

been prepared from a phage display library and previously screened for binding to the MN protein.

In addition to a rejection mistakenly based on the lack of working examples, the Examiner at pages 6-7 of the Office Action reasons that

> . . . protein chemistry is probably one of the most unpredictable areas of biotechnology. . . . [E]ven a single amino acid substitution or what appears to be an inconsequential chemical modification will often dramatically affect the biological activity and characteristic of a protein.

The Examiner further states at page 6:

> One of skill in the art would not be able to practice the invention within the scope of the claims because there are a multitude of molecules that are potentially available to one of skill to use or identify as potential inhibitors of the MN protein.

In response, the Applicants respectfully submit first, that the Specification clearly provides guidance for selecting molecules to be tested by the screening method of the present invention, guidance that substantially narrows the field of candidate molecules that are potential inhibitors of the MN protein. Applicants also respectfully emphasize that as a pioneering invention, the MN protein is entitled to a broad range of equivalents.

Under the section entitled Design and Development of MN-Blocking Drugs or Antibodies (page 20, line 24 to page 22,

line 19), the Specification provides very specific direction for designing and/or selecting molecules that are potential inhibitors of the MN protein and that are candidates for the screening assay of the present invention. For example, as stated in the Specification:

> Molecules can be constructed to block the MN receptor binding site. For example, use of a phage display peptide library kit [as Ph.D7-7 Peptide 7-Mer Library Kit from New England Biolabs; Beverly, MA (USA)] as exemplified in Examples 2 and 3, can be used to find peptides with high affinity to the target molecules. Biologic activity of the identified peptides will be tested in vitro by inhibition of cell adhesion to MN protein, by effects on cell morphology and growth characteristics of MN-related tumor cells (HeLa) and of control cells. . . .

[Instant application, page 21, lines 15-23]. That particular method has resulted in the production of at least two working examples, as described in Example 2 of the Specification.

Alternatively, the Specification suggests the use of peptides containing the binding site of the MN protein to prepare antibodies that recognize and block the MN binding site, antibodies that could later be used to inhibit the MN protein. [Instant application, page 21, lines 24-30.] The Specification teaches the amino acid sequence for the MN cell adhesion site (SEQ ID NOS: 10 and 97-106). Moreover, the Specification describes a working example, the M75 Mab to the MN protein, which blocks the cell binding site of the MN protein.

The Specification at page 21, line 31 to page 22, line 5 reads: "Computer modeling can also be used to design molecules with specific affinity to MN protein that would mediate steric inhibition between MN protein and its receptor." The Specification by citing to a well-known reference in the art refutes the suggestion by the Examiner that the art of drug design is prohibitively unpredictable. The Specification reads at page 22, lines 6-15:

> The use of oncoproteins as targets for developing new cancer therapeutics is considered conventional by those of skill in the art. [See, e.g., Mendelsohn and Lippman, "Growth Factors," pp. 114-133, IN: DeVita et al. (eds.), Cancer: Principles and Practice of Oncology (4th Ed.; Lippincott; Philadelphia, 1993).]. . . .
>
> However, the application of such approaches to MN is new.

Described within the instant specification are several examples of molecules that are neither antibodies nor nonapeptides, that have a high probability of binding "specifically to a site on a MN protein, to which vertebrate cells adhere," and for which effects relating to the unpredictability of amino acid substitution do not apply. For example, conjugates of toxins or radionuclides with MN-directed antibodies could be made, which have a high likelihood of binding to the MN cell adhesion site; the Applicants should not be

prevented from including these substances as candidate molecules. According to the Mendelsohn and Lippman chapter cited within the instant application, there are several proven approaches for cancer drug design to growth factor receptors, including antibodies to receptors, alone or as conjugates with a variety of toxins, radionuclides, and drugs; and proteins or protein fragments capable of blocking their cognate receptor sites, also alone or as conjugates with noxious substances [Reviewed in Pastan and FitzGerald, 1991, Science, 254:1173-1177; article referenced by cited Mendelsohn and Lippman chapter.] One of skill in the art would use the rule of reason to select molecules, and not try "any and all molecules."

The Court of Customs and Patent Appeals (CCPA), predecessor court to the Federal Circuit, stated in In re Goffe, 191 USPQ 429 at 431 (CCPA 1976):

> [To] provide effective incentives, claims must adequately protect inventors. **To demand that the first to disclose shall limit his claims to what he has found will work . . . would not serve the constitutional purpose of promoting progress in the useful arts.**

[Emphasis added.] Moreover, Applicants respectfully submit that as a pioneering invention, the MN protein is entitled to a broad range of equivalents. [A basic patent on a pioneering invention is entitled to be interpreted broadly. Texas Instruments, Inc.

v. United States ITC, 231 USPQ 833 (Fed. Cir. 1986). A pioneer invention is definitely entitled to a broader range of equivalents. Perkin-Elmer Corp. v. Westinghouse Electric Corp., 3 USPQ2d 1321 (Fed. Cir. 1987); Kinzenbaco v. Deere & Co., 222 USPQ 929 (Fed. Cir. 1984); Thomas & Betts Corp. v. Litton Sys. Inc.,220 USPQ 1 (Fed. Cir. 1983); whereas a narrow improvement in a crowded field enjoys a more circumscribed application of the doctrine of equivalents. Hughes Aircraft Co. v. U.S. 219 USPQ 473 (Fed. Cir. 1983). See also, In re Hogan and Banks, 194 USPQ 527, 537 (CCPA 1977); Moreley Sewing-Machine Co. v. Lancaster, 129 U.S. 263 at 273 (1889); Boyden Power-Brake Co. v. Westinghouse, 170 U.S. 537 at 569 (1898); Hildreth v. Mastoras, 257 U.S. 27 (1921); Sessions v. Romadka, 145 U.S. 29 (1892); Studiengesellschaft Kohle mbH v. Dart Indus., 220 USPQ 841 (Fed. Cir. 1984); Hoganda AB v. Dresser Industries, Inc., 28 USPQ2d 1936 (Fed. Cir. 1993).]

As concluded by the court in Precision Metal Fabricators v. Jetstream Systems Co. (6 USPQ2d 1704, 1709 (N.D.), "The enablement requirement does not require that the patent disclose the specific embodiment of the claim; a broad claim can be enabled by disclosure of a single embodiment". The instant case is analogous to the case of Rohm & Haas Co. v. Dawson Chem. Co., 557 F. Supp. 739, 801-02, 217 USPQ 515, 563 (S.D. Tex. 1983), *rev'd on other grounds sub nom.* Rohm & Haas Co. v. Crystal

Chem. Co. 722 F.2d 1556, 220 USPQ 289 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984) ("The invention . . . was a generic invention that propanil, of all of the millions of chemical compounds available, possessed useful selective, post-emergence herbicidal activity. . . . Once this invention was conceived, . . . the inventors embarked on a series of field tests in 1957 which established selectivity in post-emergence application with a number of crops. . . . Under the circumstances, Rohm & Haas was not required to limit its 1958 application to the precise crops where selectivity had at that time been demonstrated. Such a requirement would discourage an inventor from disclosing and teaching his discovery for the public's benefit until all screening had been completed, in contravention to the guiding principles underlying § 112."). Likewise, should the Applicants be prevented from teaching the methods of a screening assay for identifying molecules with desirable properties and which are therefore likely to be useful in cancer therapy, until any and all such molecules have been identified and screened?

In conclusion, Applicants respectfully submit that they have demonstrated that the screening assay of the present invention is enabled for at least three different molecules, which molecules are therefore identified as likely candidates for cancer therapy; that there is sufficient guidance provided within the instant specification that substantially narrows the

field of candidate molecules that potentially block the cell adhesion site of the MN protein; and that as a pioneering invention, the screening assay is entitled to a broad range of equivalents.

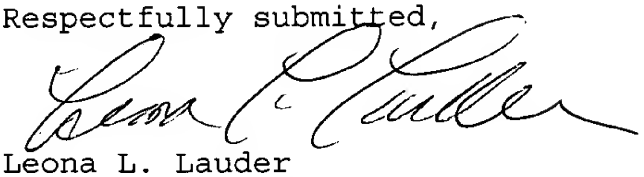
Applicants respectfully submit that the instant application reasonably conveys to ones of skill in the art that the Applicants at the time of filing the application had possession of the claimed invention, and that the instant application meets the written description requirement of 35 USC 112, first paragraph. Therefore, Applicants respectfully request the reconsideration and withdrawal of the subject rejection.

CONCLUSION

Applicants respectfully conclude that the claims as amended are in condition for allowance, and earnestly request that the claim amendment be entered, and that the claims be promptly allowed. If for any reason the Examiner feels that a telephone conference would expedite the prosecution of the

subject application, the Examiner is invited to telephone the undersigned Attorney for Applicants at (415) 981-2034.

Respectfully submitted,



Leona L. Lauder
Attorney for Applicants
Registration No. 30,863

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